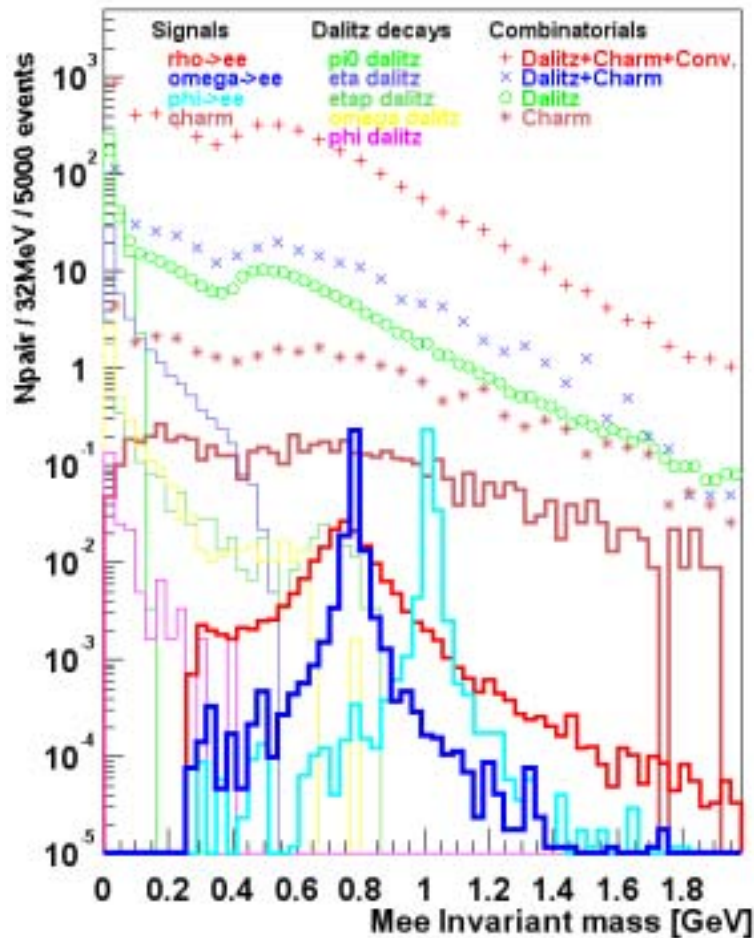# Cocktail Plot (Statistics increased)

Include electrons from conversion at the first layer of Si only.
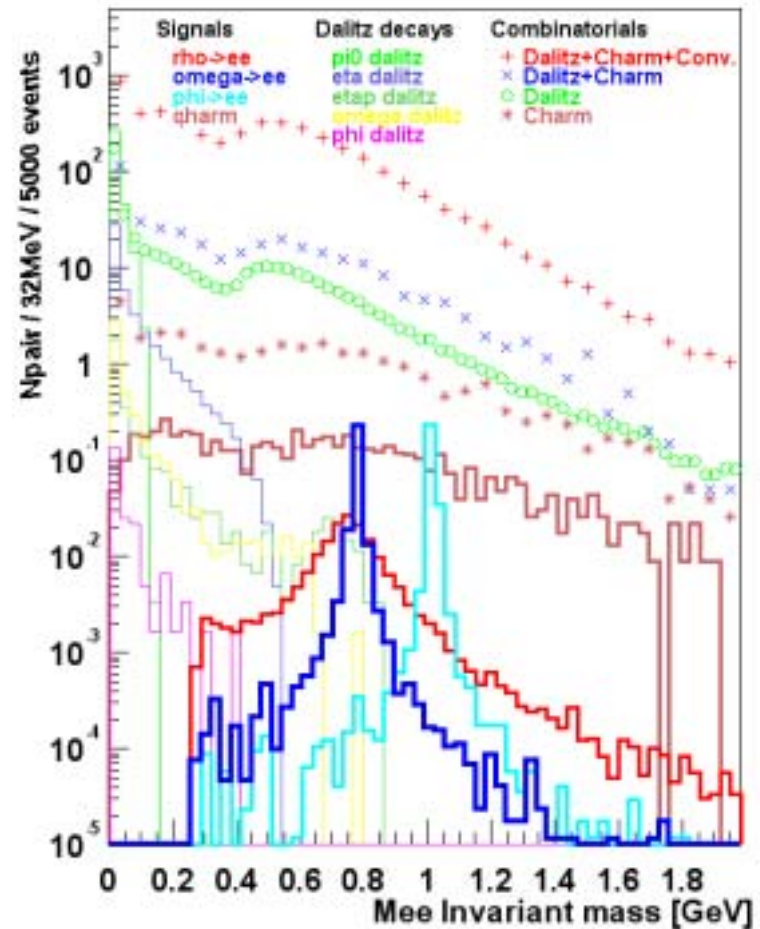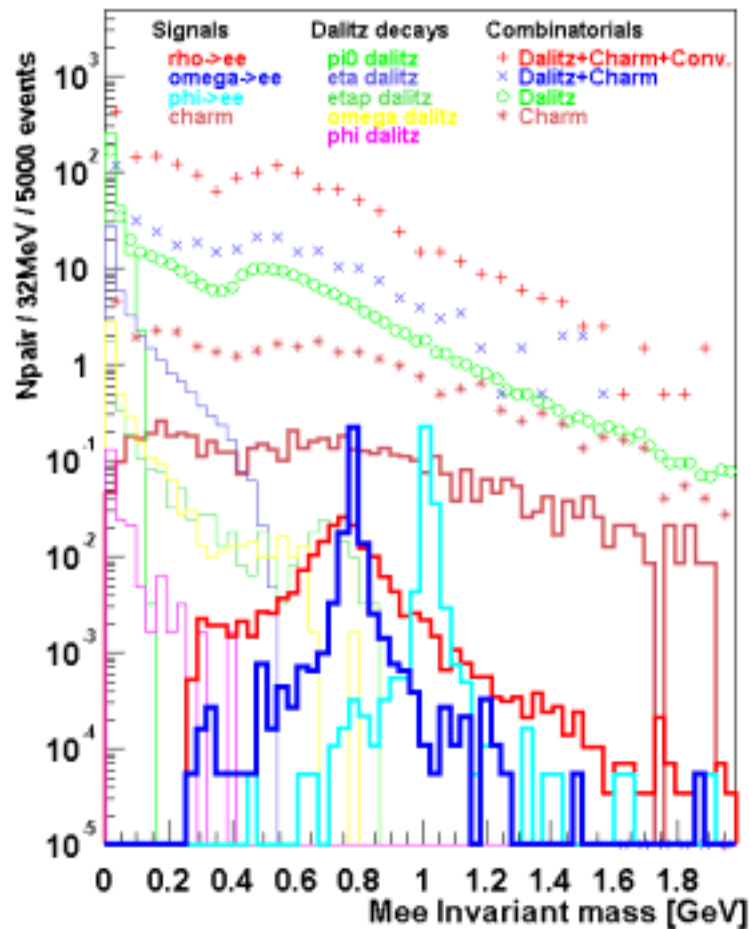
Statistics of PISA events was 10 times larger than the QM plot.

Thickness of Si: 2% X0

   (QM: 1% X0)

Cocktail Plot (QM and now)

Si : 1% X0   Si : 2% X0

Simulation Data

- Particles were generated using Exodus (made by R. Averbeck)
    - → Proton, K^+, K^-, π^+, π^-, π^0, η, η', ω, ρ, ϕ, J/ψ,Y
      Pt<10GeV/c with power low distribution.
      |Rapidity| < 1.5
    - → Particle decays were also simulated.
        - → Dalitz decays of $\pi0$, η, η'
        - → Vector mesons (ω, ρ, ϕ, J/ψ, Y) decays
- Electrons and positrons from charm decays were generated by PYTHIA and merged to EXODUS output
- Photon conversions were simulated using PISA
    - 4 layers of Silicon (2% X0 for 1 layer), TPC and HBD included. (Note: At QM, 1% X0 is assumed.)

Simulation Parameters

- Central events (dN_charge/dy(y=0) = 650)
- Ratio to dN/dy

  - π^+ or π^- 0.401
  - K^+ or K^- 0.062
  - Proton   0.039
  - Pi 0   0.445

  - Eta   0.062
  - Eta prime   0.0080
  - Rho   0.056
  - Omega   0.054
  - Phi   0.0107

- Charm

  - Ncharm/event = Nbinary * σ (p-p charm) / σ(total p-p)
    - σ(total p-p) = 41 mb, σ (p-p charm) = 648 μb
      Nbinary = 1000, thus Ncharm/event = 15.8